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Article

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THE EMPIRICAL RELEVANCE OF MINIMUM WAGES FOR THE LOW-WAGE SECTOR IN GERMANY

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MARCEL THUM**

The possible introduction of a minimum wage in Germany has led to significant controversy over the economic effects of such a change. Some fear the disappearance of the entire low-wage sectors. Others see opportunities for wage increases with no appreciable consequences. This article presents an estimate of how large the group of persons affected by a minimum wage in Germany would actually be and how many jobs might be lost.

The percentage of persons that would be affected by a minimum wage law can be determined by using the data from the survey on the salary and wage structure in the manufacturing and service sectors (Federal Statistical Office 2007). Although this data is only current up to 2001, it has maintained its validity due to the moderate wage increases in recent years. Data from this survey have the advantage of permitting differentiated conclusions on the characteristics of the wage and salary recipients. Though this data set includes only the manufacturing and selected service sectors, it seems to be representative of most of the German Economy.

According to these statistics, the average gross hourly wage (excl. supplements for shift work, night work or overtime) in 2001 was €15.10 in western Germany and €10.50 in eastern Germany. The wage spread between the individual industries is considerable, however. The lowest hourly rates are found in the east German hotel and restaurant sector (€6.70), the highest for the west German EDP service providers (€21.30).

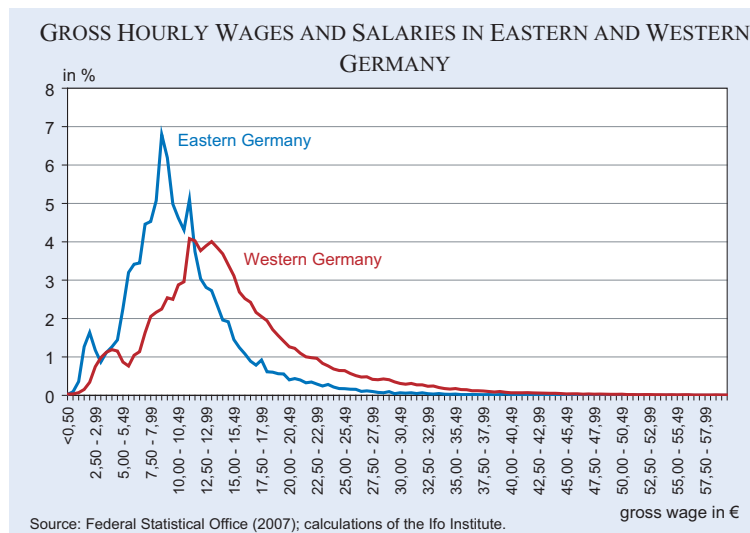
The distribution of gross hourly wages among all employees (extrapolated values) is provided

in Figure 1. In comparison with western Germany, eastern Germany shows a clear concentration of the wage distribution on the left-hand side of the scale. Furthermore, the variance in hourly wages is much smaller in eastern Germany than in western Germany, which is particularly due to low figures for the upper-wage groups in eastern Germany. Those earning less than €6.50 per hour comprise 18.1 percent in eastern and 8.5 percent in western Germany. An hourly wage of less than €7.50 is earned by as much as 26 percent in eastern Germany (western Germany: 11.3 percent). If our data set is representative for the entire private sector in Germany, this amounts to 860,200 (1,236,000) employees in eastern Germany and 2,216,000 (2,938,000) employees in western Germany (figures for wages lower than €6.50/€7.50).

What are the likely employment effects of introducing a statutory minimum wage in Germany? Since this would increase the labour costs of employers, they can be expected to implement cost-avoidance measures, at least in the medium and long term:

- Rationalisation of production via substitution of labour by capital: For example, some security services could be replaced by electronic monitoring systems. Information terminals could be used instead of service counters. In these examples, some low-wage earners would lose their jobs.
- Increase of selling prices to pass on the higher labour costs to the customer: If consumer demand fell in reaction to the increased prices, employment would also decrease. How strong the decrease in demand would be in individual industries

Figure 1



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tries depends on the existing substitution possibilities (for example, via imports or do-it-yourself).

- **Refuge into the shadow economy:** The introduction of a minimum wage can lead to an increase of the shadow economy when customers are not willing to accept higher prices and, therefore, employees lose their jobs. In the end, the minimum wage would be circumvented.
- **Self-employment:** Since the minimum wage only applies to dependent employment, it can be avoided if employees become self-employed. In particular, this reaction can be expected in several service industries.

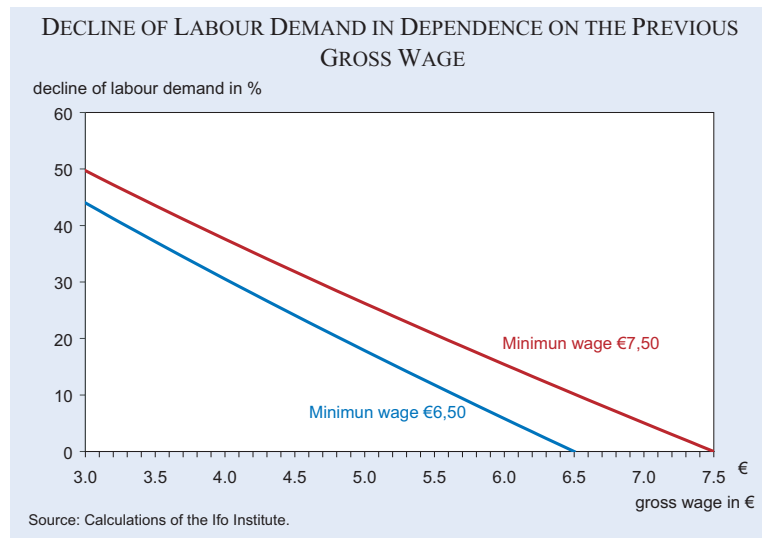
Wage increases that are not covered by corresponding increases in productivity will, as a rule, have negative effects on employment. How great these effects will be, however, is a matter of open debate.

In the following, we assume a minimum wage of €7.50 an hour. In many economic sectors, a considerable part of employees earn less than this rate. Lower wages are particularly common in the areas of temporary employment, personnel agencies, detective agencies, security services as well as in restaurant services. In eastern Germany some 70 percent of all employees in these sectors earn wages of less than €7.50 an hour. Also in the food and textile sectors, wages below this level are widespread, again in particular in eastern Germany. If we differentiate according to occupational groups, wages under €7.50 per hour are frequently encountered for cleaning personnel, domestic services, security personnel or salespeople.

The same calculations are also made for a minimum wage of €6.50 an hour. Here, too, low wages are particularly widespread in the above-mentioned sectors or employment groups; only half of the employees in the east German hotel and restaurant trade or in the field of detective agencies/protection services receive at most wages at this level.

Empirical estimates indicate a negative wage elasticity of labour demand of an order of magnitude of about 0.75. For example, Zimmermann and Bauer

Figure 2



(1997) estimate the elasticity of low-skilled workers at -0.85 . Riphahn, Thalmaier and Zimmermann (1999) consider as the most plausible scenario an elasticity of -0.6 for the low wage sector in Germany.¹ A wage elasticity of labour demand of -0.75 means that at a one-percent wage increase, employment is reduced by 0.75 percent. The farther the previously paid wage is from the new minimum wage for a specific activity, the greater is the percentage wage increase and the stronger the share of displaced jobs. Figure 2 shows for minimum wages of €7.50 and €6.50 the percentage of jobs in each gross wage category that would be eliminated. A company that previously paid an hourly rate of €7, must, at a minimum wage of €7.50, increase the gross wage by only 7 percent.² Correspondingly, the loss of jobs at 5 percent is relatively moderate. A sector that only pays €5 experiences an increase in gross wages of 50 percent; such a wage increase translates into job losses of 26 percent with a labour demand elasticity of -0.75 .

Assuming that a labour demand elasticity of -0.75 is valid for all segments of the labour market and for the entire private sector, the introduction of a minimum wage of €7.50 would lead to a reduction in employment in the low-pay bracket (30.8 million employees) of around 1,108,000 persons, the (percentage) differences between eastern and western Germany being small. This would correspond to a

¹ For an overview of the wage elasticity of labour demand, see Sinn et al. (2002, Table 3.3).

² For the reaction of labour demand, the increase of labour costs is relevant, strictly speaking. Since the relevant statistics contain no information on the non-wage labour costs, gross wages are approximately employed.

Table 1

**Cumulated employment losses
with the introduction of a minimum wage of €7.50/hour**

Current gross wage	Eastern Germany	Western Germany	Germany
	Persons	Persons	in %
< 3.00	- 132,886	- 211,560	- 59.8
< 3.50	- 152,074	- 330,678	- 55.3
< 4.00	- 173,503	- 449,087	- 51.1
< 4.50	- 194,295	- 556,764	- 47.3
< 5.00	- 214,187	- 644,096	- 43.8
< 5.50	- 239,387	- 697,225	- 40.9
< 6.00	- 266,852	- 733,180	- 37.8
< 6.50	- 287,567	- 767,951	- 34.3
< 7.00	- 300,001	- 790,492	- 30.8
< 7.50	- 305,313	- 801,164	- 26.5

Source: Federal Statistical Office; Ifo calculations.

decrease in employee numbers of 3 percent in western Germany and 6.4 percent in eastern Germany. Jobs for those with very low wages would, however, decline disproportionately (see Table 1). The number of employment possibilities at an hourly wage rate of less than €4 would decrease by 51 percent in total. The minimum wage would affect 620,000 employees in the private sector. Eastern Germany would also be disproportionately affected by this reduction in jobs.

With a minimum wage of €6.50, the total employment losses would be smaller but would amount to 826,000 (eastern Germany: 222,686 persons, western Germany: 603,844 persons). This would correspond to a drop of employment in the low wage segment of 27 percent. With respect to the total number of employees, the job loss would amount to 2.6 percent. In eastern Germany, it would be 4.7 percent due to the greater importance of the low wage sector for overall employment.

The introduction of minimum wages does, of course, lead to higher incomes for those who manage to keep

their jobs. This amounts to an estimated €2.2 billion (minimum wage of €6.50) or €3.2 billion (minimum wage of €7.50) annually. Relative to the total amount of wages and salaries in Germany, this is a miniscule amount (0.19 or 0.20 percent of total employee remuneration). In addition, it must not be overlooked that this increase in incomes is a redistribution from employers to employees, so that in the aggregate no additional purchasing power results. As an instrument

for stimulating domestic demand, minimum wages are thus unsuitable.

Nevertheless, the warning of possible job losses from a minimum wage must not be understood as a call for the withdrawal of the welfare state. The state's responsibility to ensure that as many citizens as possible can earn a sufficient income from their own labour is certainly justifiable. However, the instrument of the minimum wage carries with it the danger that the increase in income for some is dearly paid for by job losses of other low-wage earners. The responsibilities of the welfare state could be more efficiently implemented by employment subsidies such as the earned income tax credit.

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Table 2

**Cumulated employment losses
with the introduction of a minimum wage of €6.50/hour**

Current gross wage	Employee in the east	Employee in the west	Germany
	Persons	Persons	in %
< 3.00	- 123,446	- 194,771	- 55.3
< 3.50	- 140,142	- 298,419	- 50.2
< 4.00	- 158,010	- 397,151	- 45.6
< 4.50	- 174,366	- 481,858	- 41.3
< 5.00	- 188,742	- 544,972	- 37.5
< 5.50	- 204,633	- 578,475	- 34.2
< 6.00	- 217,987	- 595,958	- 30.8
< 6.50	- 222,686	- 603,844	- 26.9

Source: Federal Statistical Office; Ifo calculations.